

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1-13. (Canceled)

14. (Currently amended) An isolated polypeptide comprising a vanadium haloperoxidase polypeptide consisting of a catalytic helical frame domain that complexes a vanadium ion and catalyzes the oxidation of o-dianisidine (ODA), wherein the vanadium haloperoxidase polypeptide comprises an amino acid sequence having at least 70% sequence identity to the sequence from residue 435 to residue 632 of SEQ ID NO:2, and has a molecular weight of no more than 40 kDa.

15. (Original) The isolated polypeptide of claim 14, wherein the polypeptide comprises an Ala residue at a position corresponding to position 455 of SEQ ID NO: 2, a Cys residue at a position corresponding to position 457 of SEQ ID NO: 2, and a Val residue at position 525 of SEQ ID NO: 2.

16. (Canceled)

17. (Currently amended) The isolated polypeptide of claim 16, wherein the polypeptide has at least 80% identity to a polypeptide as set forth in SEQ ID NO:2.

18. (Currently amended) The isolated polypeptide of claim 16, wherein the amino acid sequence is residue 435 to residue 632 of SEQ ID NO:2.

19. (Original) The isolated polypeptide of claim 16, wherein the polypeptide has a molecular weight of about 20 kDa.

20. (Original) The isolated polypeptide of claim 16, wherein the polypeptide is immobilized on a solid surface.

21. (Original) The isolated polypeptide of claim 16, wherein the polypeptide further comprises a cleavable linker sequence.

22. (Original) The isolated polypeptide of claim 21, wherein the cleavable linker sequence is an enterokinase cleavable linker sequence.

23. (Original) The isolated polypeptide of claim 16, wherein the polypeptide further comprises an purification tag.

24. (Original) The isolated polypeptide of claim 23, wherein the purification tag comprises a plurality of histidine residues.

25. (Original) A method for enzymatically halogenating a compound, the method comprising contacting the compound with an isolated polypeptide of claim 14.

26. (Original) The method of claim 25, wherein the compound is a protein.

27. (Original) A method for enzymatically oxidizing a compound, the method comprising contacting the compound with an isolated polypeptide of claim 16.

28-36. (Canceled)